

Sewer plants also a culprit on Lake Erie's toxic algae

PD 9-6-11
SPENCER HUNT
Columbus Dispatch Reporter

Scientists know what causes the toxic blue-green algae that stain western Lake Erie every summer.

It's phosphorus, a byproduct of sewage, fertilizers and manure. But which is to blame: treatment plants or farms?

A new federal report points the finger at both and has prompted new questions from Ohio researchers about how to reduce pollution and curb algae growth.

The U.S. Geological Survey report found that sewage-treatment plants in Detroit, Toledo and other lakeside communities put nearly the same amount of phosphorus into Lake Erie as the fertilizers and manure that rains wash off farm fields. That's a surprise for Ohio-based scien-

tists who have estimated that farm fields can provide as much as 60 percent of the phosphorus in Lake Erie.

"There are some major discrepancies from these modeled results and from what we've measured," said Peter Richards, a water-quality researcher at Heidelberg University's National Center for Water Quality Research.

Dale Robertson, a Geological Survey research hydrologist, stands by his results. He says his computer modeling shows that government-ordered cleanups at sewage plants in the 1980s didn't cut enough phosphorus.

"They are not taken care of yet," Robertson said.

At stake is Erie's \$10 billion-a-year fishing and tourism industry. Blue-green algae excrete liver and nerve toxins that can sicken people and kill pets, fish

and other wildlife. The algae also help create an expanding oxygen-depleted "dead zone" in Lake Erie where fish cannot live.

Manure that rains wash off farms is considered the prime source of phosphorus in Grand Lake St. Mary's, a 13,000-acre lake in western Ohio where the state has posted algae warnings for swimmers since 2009.

The current "bloom" of algae in Lake Erie has prompted health warnings at public beaches at Maumee Bay State Park and Kelleys Island.

Blue-green algae problems date to the 1970s but vanished from Erie in the 1980s after sewage-treatment plant upgrades. Farmers also took steps to cut the amount of phosphorus-laden soil that rains wash into nearby streams.

But algae started making a comeback in 1995.

Heidelberg's data show heavy concentrations of farm-field phosphorus flowing down the Maumee and Sandusky rivers and into Lake Erie. Robertson's results list the Maumee as the leading phosphorus supplier and estimates that 82.6 percent came from farms. The Detroit River is the No. 2 source, with nearly 75 percent coming from sewage-treatment plants. The Detroit River estimate is low, he added, because it doesn't include phosphorus from the Canadian side.

Overall, 42.1 percent of Lake Erie's total phosphorus load comes from sewage, and 43.6 percent comes from farms. The rest comes from decaying plant matter in forests and wetlands and from lawn fertilizers washed into storm sewers.

Sandy Bihn of the Toledo-based Lake Erie Waterkeeper group said the report should

prompt officials to consider ordering deeper phosphorus cuts at Detroit's sewage-treatment plants.

Larry Antosch, environmental policy director for the Ohio Farm Bureau Federation, had a similar reaction.

"It appears that sewage treatment would be playing a larger role than what we thought of in the past," he said.

The federation has long said farms are not solely to blame for algae problems in Ohio lakes and ponds.

Jeffrey Reutter, director of Ohio Sea Grant and Stone Laboratory of Ohio State University, said the Geological Survey's findings don't address the fact that the Detroit River supplies 80 percent of Lake Erie's water.

That much water, he said, dilutes the phosphorus going into the lake.